

Ergonomics demonstration project: High tech manufacturing

Need

Efficient implementation of the ergonomics rule requires employers to be able to quickly and accurately identify caution zone risk factors in their jobs. This project provided the opportunity to evaluate the reliability of caution zone risk-factor assessments by supervisors. The Fluke Corporation is a high-tech manufacturing firm, which is a prevalent and important industry in the state.

This project also provides an opportunity to demonstrate the use of work sampling analysis for hazard zone risk factors involving repetitive motions. Work sampling is a systematic method for observing activities and postures at regular intervals to obtain an accurate estimate of musculoskeletal injury risk factors. The use of the work sampling is commonly used in unstructured work such as construction, and it is an approach that could be used in all industries. Work sampling may prove useful in simplifying future training and assisting in choosing a hazard-analysis tool.

Goals

The goals of the demonstration project are to:

- Evaluate the reliability of caution zone risk-factor assessments by supervisors.
- Demonstrate the use of a work sampling approach for analysis of hazard zone risk factors in electronics assembly.
- Evaluate possible caution zone and hazard zone risk factors and potential solutions for electronics assembly operations.

Timetable

August 2000Begin initial discussions and initiate evaluations

November 2000Completed final report and documentation

Results

- Supervisors' ratings of caution zone jobs agreed with ergonomist assessments 85% of the time. Where there was disagreement, typically it was because supervisors identified more risk factors as caution zone jobs than ergonomists. Most participants took less than 30 minutes to complete the caution zone assessment and background questionnaire.
- Work sampling appeared to work very effectively as a hazard-analysis tool.
- Only one hazard zone risk factor was observed (wrist repetition), which could easily be addressed through greater vigilance in an already existing job-rotation scheme.
- A summary report was presented to the company detailing the reliability of supervisor assessments, and identification of caution zone and hazard zone risk factors, with recommendations for mitigating hazard zone risk factors.